

ANNAMACHARYA INSTITUTE OF TECHNOLOGY AND SCIENCES, TIRUPATI

(Autonomous)

Course structure for Four Year Regular B.Tech. Degree Program

(Effective for the batches admitted from 2020-21)

CIVIL ENGINEERING (CE)

INDUCTION PROGRAM (3 weeks duration)

- ❖ Physical activity
- ❖ Creative Arts
- ❖ Universal Human Values
- ❖ Literary
- ❖ Proficiency Modules
- ❖ Lectures by Eminent People
- ❖ Visits to local Areas
- ❖ Familiarization to Dept./Branch & Innovations

Semester I (First year)

Sl. No.	Category	Course Code	Course Title	Hours per week			Credits	Scheme of Examination (Max. Marks)		
				L	T	P		CIE	SEE	Total
1	Basic Science course	20ABS9901	Algebra and Calculus	3	0	0	3	30	70	100
2	Basic Science course	20ABS9905	Engineering Chemistry	3	0	0	3	30	70	100
3	Humanities and Social science	20AHS9901	Communicative English	3	0	0	3	30	70	100
4	*Engineering Science Courses	20AES0304	Engineering Workshop Practice	1	0	4	3	30	70	100
5	Engineering Science Courses	20AES0501	Problem Solving and Programming	3	0	0	3	30	70	100
6	Humanities and Social science LAB	20AHS9902	Communicative English Lab	0	0	3	1.5	30	70	100
7	Basic Science course (LAB)	20ABS9910	Engineering Chemistry Lab	0	0	3	1.5	30	70	100
8	Engineering Science Courses (LAB)	20AES0503	Problem Solving and Programming Lab	0	0	3	1.5	30	70	100
Total credits							19.5	240	560	800

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Semester II (First year)

Sl. No.	Category	Course Code	Course Title	Hours per week				Credits	Scheme of Examination (Max. Marks)		
				L	T	P	C		CIE	SEE	Total
1	Basic Science courses	20ABS9906	Differential Equations and Vector Calculus	3	0	0	3		30	70	100
2	Basic Science courses	20ABS9903	Engineering Physics	3	0	0	3		30	70	100
3	Engineering Science Courses	20AES0202	Basics of Electrical and Electronics Engineering	3	0	0	3		30	70	100
4	Engineering Science Courses	20AES0509	Basics of Python Programming	3	0	0	3		30	70	100
5	Engineering Science Courses	20AES0301	Engineering Graphics	1	0	4	3		30	70	100
6	Engineering Science Courses (LAB)	20AES0204	Basics of Electrical and Electronics Engineering Lab	0	0	3	1.5		30	70	100
7	Basic Science course (LAB)	20ABS9908	Engineering Physics Lab	0	0	3	1.5		30	70	100
8	Engineering Science Courses (LAB)	20AES0510	Basics of Python Programming Lab	0	0	3	1.5		30	70	100
9	Mandatory course (AICTE suggested)	20AMC9902	Constitution of India	2	0	0	0		30	-	30
Total credits								19.5	270	560	830

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Semester III (Second year)

Sl. No.	Category	Course Code	Course Title	Hours per week				Credits	Scheme of Examination (Max. Marks)		
				L	T	P	C		CIE	SEE	Total
1	Basic Science courses	20ABS9913	Probability & Statistics, Partial differential equations	3	0	0	3		30	70	100
2	Professional core course	20APC0101	Mechanics of Materials	3	0	0	3		30	70	100
3	Professional core course	20APC0102	Surveying	3	0	0	3		30	70	100
4	Professional core course	20APC0103	Fluid Mechanics	3	0	0	3		30	70	100
5	Humanities and social science	20AHSMB01	Managerial Economics and Financial Analysis	3	0	0	3		30	70	100
6	Professional core courses (LAB)	20APC0104	Strength of Materials Lab	0	0	3	1.5		30	70	100
7	Professional core courses (LAB)	20APC0105	Surveying Lab	0	0	3	1.5		30	70	100
8	Professional core courses (LAB)	20APC0106	Fluid Mechanics Lab	0	0	3	1.5		30	70	100
9	Skill Oriented Course*	20APC0107	Basics of CAD	1	0	2	2		100	-	100
10	Mandatory course (AICTE suggested)	20AMC9903	Environmental Studies	2	0	0	0		30	-	30
Total credits								21.5	370	560	930

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Semester IV (Second year)

Sl. No.	Category	Course Code	Course Title	Hours per week				Credits	Scheme of Examination (Max. Marks)		
				L	T	P	C	CIE	SEE	Total	
1	Basic Science courses	20ABS9922	Mathematical Modelling and optimization techniques	3	0	0	3	30	70	100	
2	Professional core course	20APC0108	Strength of Materials	3	0	0	3	30	70	100	
3	Professional core course	20APC0109	Hydraulic Engineering	3	0	0	3	30	70	100	
4	Professional core course	20APC0110	Structural Analysis-I	3	0	0	3	30	70	100	
5	Professional core course	20APC0111	Concrete Technology	3	0	0	3	30	70	100	
6	Humanity Science Courses	20AHS9905	Universal Human Values	3	1	0	3	30	70	100	
7	Professional core courses (LAB)	20APC0112	Hydraulic Machinery Lab	0	0	3	1.5	30	70	100	
8	Professional core courses (LAB)	20APC0113	Concrete Technology Lab	0	0	3	1.5	30	70	100	
9	Professional core courses (LAB)	20APC0114	Computer-aided Civil Engineering Drawing Lab	0	0	3	1.5	30	70	100	
10	Skill Oriented Course*	20APC0115	Land survey with 2D drafting /Soft skills	1	0	2	2	100	-	100	
Total credits								24.5	370	630	1000
Community service Project with credits (To visit the selected community to conduct survey (Socio-economic & domain survey) and conduct sensitization/awareness program/activities at the end of IV- semester before commencement of V-semester and complete immersion programme also during V-Semester and submit report in V - semester. Assessment will be done at the end of V-Semester).											
Honors/ Minor courses (The hours distribution can be 3-0-2 or 3-1-0 also)				4	0	0	4	30	70	100	

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Semester V (third year)

Sl. No.	Category	Course Code	Course Title	Hours per week			Credits	Scheme of Examination (Max. Marks)		
				L	T	P		CIE	SEE	Total
1	Professional core course	20APC0116	Soil Mechanics	3	0	0	3	30	70	100
2	Professional core course	20APC0117	Building Technology	3	0	0	3	30	70	100
3	Professional core course	20APC0118	Engineering Geology	3	0	0	3	30	70	100
4	Open Elective course / Job Oriented Elective	20APE0417	Sensor Networks	3	0	0	3	30	70	100
		20APC0323	Operations Research							
		20AOE0301	Management Science							
5	Professional Elective courses	20APE0101	Structural Analysis-II	3	0	0	3	30	70	100
		20APE0102	Water Harvesting and Conservation							
		20APE0103	Cost Effective Housing Techniques							
6	Professional core courses (LAB)	20APC0119	Soil Mechanics Lab	0	0	3	1.5	30	70	100
7	Professional core courses (LAB)	20APC0120	Engineering Geology Lab	0	0	3	1.5	30	70	100
8	Skill Oriented Course*	20APC0121	Building planning & Drawing Lab	1	0	2	2	100	-	100
9	Mandatory course (AICTE suggested)	20AMC9904	Professional Ethics and Human Values	2	0	0	0	30	-	30
10	CSP	20CSP0101	Community service project	0	0	0	1.5	100	-	100
Total credits							21.5	440	490	930
Honors/ Minor courses (The hours distribution can be 3-0-2 or 3-1-0 also)				4	0	0	4	30	70	100

Semester VI (third year)

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Semester VII (Fourth year)

Sl. No.	Category	Course Code	Course Title	Hours per week			Credits	Scheme of Examination (Max. Marks)		
				L	T	P		CIE	SEE	Total
1	Professional Elective courses	20APE0107	Estimation Costing & Valuation	3	0	0	3	30	70	100
		20APE0108	Environmental Impact Assessment and management							
		20APE0109	Engineering Materials for Sustainability							
2	Professional Elective courses	20APE0110	Hydrology and Water Resources Engineering	3	0	0	3	30	70	100
		20APE0111	Advanced Structural Design							
		20APE0112	Civil Infrastructure for Smart City Development							
3	Professional Elective courses	20APE0113	Design and Drawing of steel Structures	3	0	0	3	-	-	100
		20APE0114	Railways airport Docks and Harbours							
		20APE0115	Elements of Earth Quake Engineering							
4	Open Elective course / Job Oriented Elective	20APC0510	Computer Networks	3	0	0	3	30	70	100
		20AOE0402	Bio Medical Instrumentation							
		20APE0119	Intellectual Property Rights							
5	Professional Elective courses	20APE0116	Pre-stressed Concrete	3	0	0	3	30	70	100
		20APE0117	Ground Improvement Techniques							
		20APE0118	Repair and Rehabilitation of Structures							
6	Humanities & Social Science Elective*	20AOE9901	English For Research Paper Writing	3	0	0	3	30	70	100
		20AHE9903	Professional Communication							
7	Skill Advanced Course*	20APC0129	Basics of Quantity surveying	1	0	2	2	100	-	100
	Industrial/ Research Internship 2 months (Mandatory) after Third Year (to be evaluated during VII semester)			0	0	0	3	100	-	100
	Total credits						23	350	350	800
	Honors/ Minor courses (The hours distribution can be 3-0-2 or 3-1-0 also)			4	0	0	4	30	70	100

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Semester VIII (Fourth year)

Sl. No.	Category	Course Code	Course Title	Hours per week			Credits	Scheme of Examination (Max. Marks)		
				L	T	P		CIE	SEE	Total
1	Major Project	PROJ	Project Work, Seminar & Internship in Industry	0	0	0	12	60	140	200
	Internship (6 Months)									
	Total credits						12	60	140	200